

**Algebra II**  
**Auch**

**Section 2.3**  
**Date:**

Objectives

- Determine whether a function is linear.
- Graph a linear function given two points, a table, an equation, or a point and a slope.

Vocabulary:

- Linear function –
  
- slope –
  
- y-intercept -
  
- x-intercept -
  
- slope-intercept form –

<b>Time (h)</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Distance from land (mi)</b>	<b>350</b>	<b>325</b>	<b>300</b>	<b>275</b>	<b>250</b>

**Example 1**

**Determine whether each data set could represent a linear function.**

a) 

x	0	2	4	6
F(x)	-1	2	5	8

b) 

x	-1	2	5	8
F(x)	0	1	3	6

**Try it!**

**Determine whether each data set could represent a linear function.**

a) 

x	4	11	18	25
F(x)	-6	-15	-24	-33

b) 

x	10	8	6	4
F(x)	7	5	1	-7

**Example 2**

**Graph each line.**

- a) the line with slope  $\frac{2}{3}$  that passes through (1,1)



**Graph each line.**

- b) the line with slope  $-\frac{1}{3}$  that passes through (-2,3)



**Try it!**

**Graph the line.**

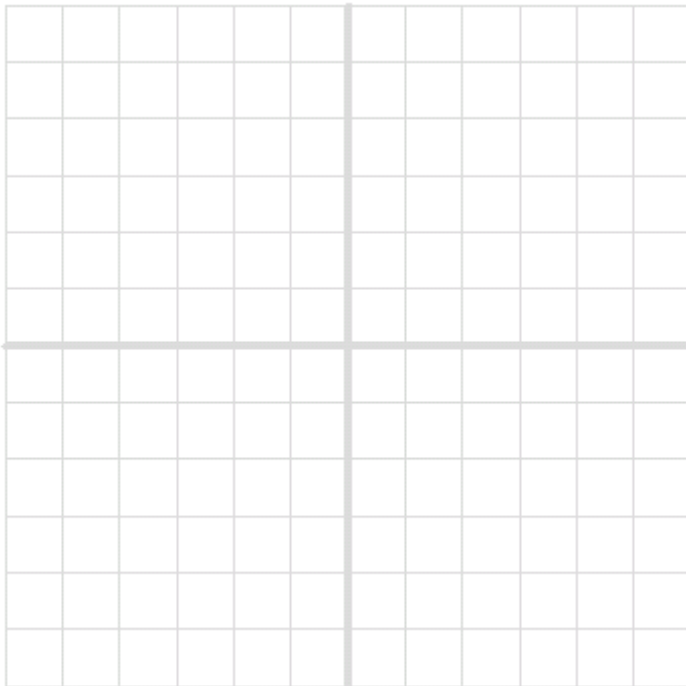
- c) the line with slope  $\frac{4}{3}$  that passes through (3,1)



**Example 3**

**Graphing lines using intercepts .**

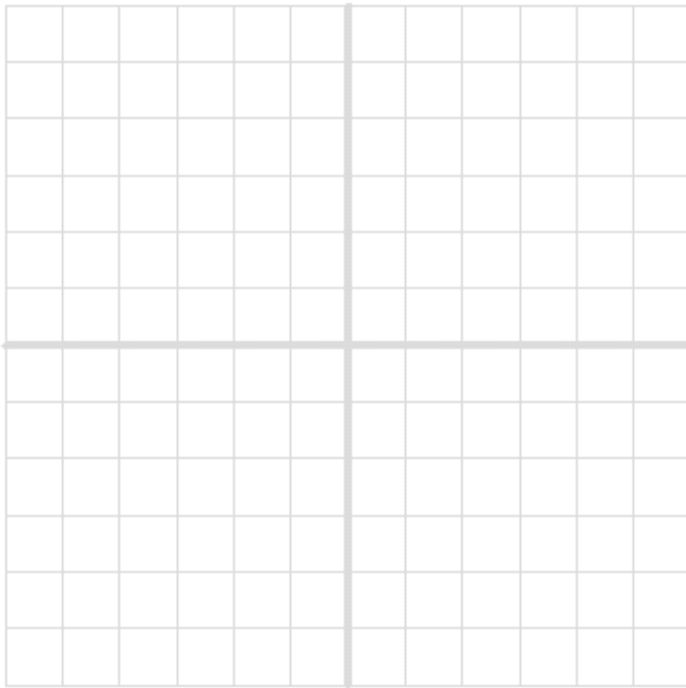
- a) Find the intercepts of  $2x - 3y = 12$ , and graph the line.



*Try it!*

**Graphing lines using intercepts .**

b) Find the intercepts of  $6x - 2y = -24$  , and graph the line.



**Example 4**

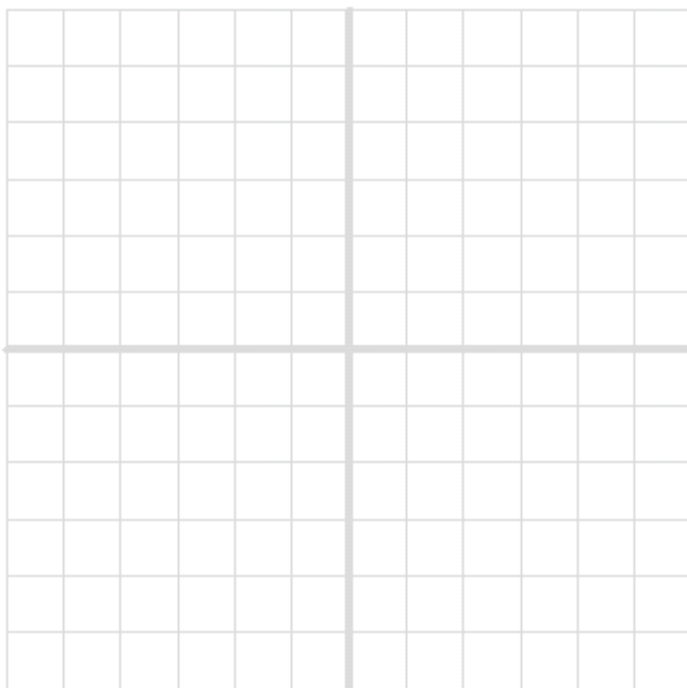
**Write each function in the slope-intercept form. Then graph each function.**

$$3x + y = 5$$



**Write each function in the slope-intercept form. Then graph each function.**

$$\frac{3}{2}y = x - 3$$



*Try it!*

**Write each function in the slope-intercept form. Then graph each function.**

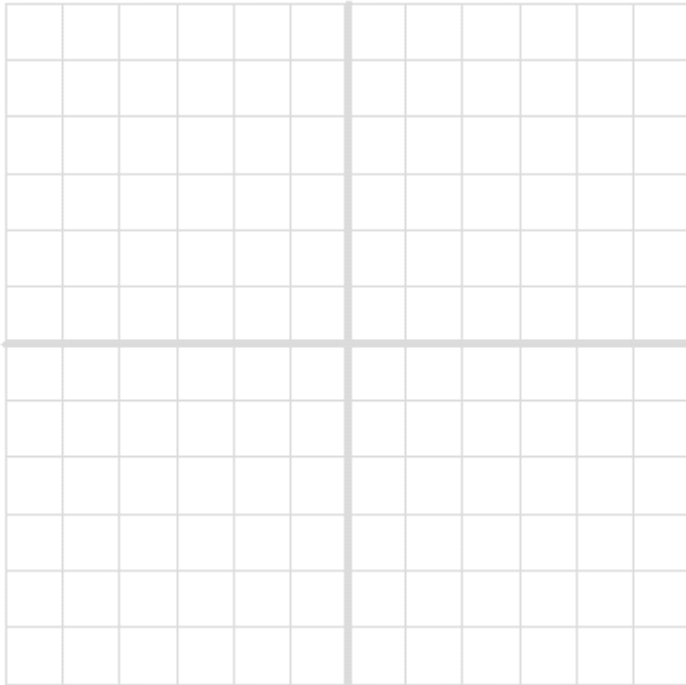
$$2x - y = 9$$



**Example 5**

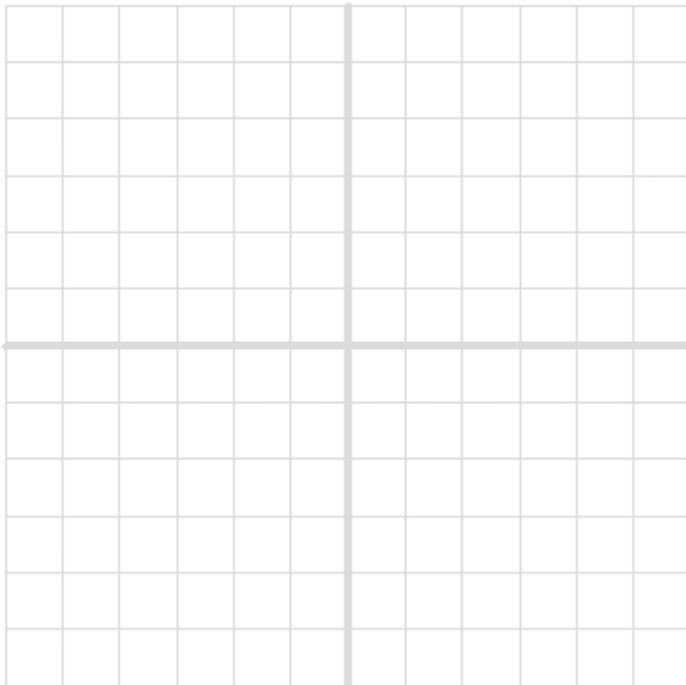
**Determine if each line is vertical or horizontal, then graph.**

$$x = -3$$



**Determine if each line is vertical or horizontal, then graph.**

$$y = 1$$



***Try it!***

**Determine if each line is vertical or horizontal, then graph.**

$$y = -5$$



$$x = 0.5$$



